

Remarks

Claims 1-16 were pending in the application. Claims 1-12 were withdrawn. Claims 1-16 were subject to restriction and/or election. Claims 13-16 were rejected. No claims were merely objected to and no claims were allowed. By the foregoing amendment, no claims are canceled, claim 13 is amended, and claims 17-23 are added. No new matter is presented.

Election/Restriction

Election/restriction was required as follows:

- I. Claims 1-12, drawn to an apparatus, classified in class 431, subclass 1.
- II. Claims 13-16, drawn to a method, classified in class 134, subclass 26.

Applicant affirms the election of Group II with traverse. Traverse is on the grounds that examination of all the claims would not present an undue burden. Accordingly, if the restriction requirement is withdrawn, claims 1-23 will be examined. If not withdrawn, claims 13-23 will be examined.

Claim Rejections-35 U.S.C. 112

Claims 13-16 were rejected under 35 U.S.C. 112(1). Applicants respectfully traverse the rejection as to the amended claims.

It was first asserted that "the specification, while being enabling for industrial equipment, does not reasonably provide enablement for any type of vessel." Office action, page 3. It appears the examiner has chosen a broad view of vessel to include vessels not subject to detonative cleaning. Accordingly, Applicants have amended claim 13 to identify the "industrial equipment" noted by the examiner.

It was further asserted that the element "of igniting the fuel/oxidizer to produce a shockwave is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure." Office action, page 4, first paragraph. Applicants submit that the specification clearly discloses and enables ignition/initiation of the fuel/oxidizer charge to create a detonation wave. This is discussed in paragraphs 0030-0034. For example, a deflagration-to-detonation transition is identified in the second sentence of paragraph 0034. Claim 13 identifies initiating the reaction of the fuel and oxidizer. This is further limited by the

phrase "so as to cause a shockwave to impinge upon the surface..." As previously noted, the shockwave is not inherently the immediate result of the initiating (e.g., there may be a transitional deflagration-to-detonation process such as is disclosed in the specification). However, Applicants are open to any suggestions the examiner might have to improve the wording of this portion of the claim.

Claims 13-16 were rejected under 35 U.S.C. 112(2). Applicants respectfully traverse the rejection as to the amended claims.

It was asserted that claim 13 was "indefinite because there is no positive step of cleaning a surface within a vessel." It was further asserted that "the vessel interior" lacked antecedent basis. By the foregoing amendment, the preamble of claim 13 has been amended to identify that the cleaning occurs by removal of a material and there is a positive recitation of the shockwave impingement as at least loosening said material. Accordingly, no further positive recitation is believed required. If, however, the examiner believes alternative wording would be preferable, she is invited to contact the undersigned to discuss possible amendments.

Claim Rejections-35 U.S.C. 102

Claims 13-16 were rejected as being anticipated by Plavnik et al. (U.S. Patent No. 6,684,823). Applicant respectfully traverses the rejection.

In the first paragraph of page 5 of the Office action, several citations were made to passages in Plavnik et al. as respectively disclosing "purge gas" and "additional air". However, the cited passages yield no such teachings. For example, the col. 10, lines 25-30 passage does not identify a purge of combustion products or contaminants from the combustion conduit. Rather it relates to a purge of "residual fuel" from fuel lines. The col. 11, lines 50-55 passage only relates to the fuel/air mixture which forms the detonative charge. It does not identify separate air. Regarding claim 16, no specific embodiment has been shown where the pressurized gas is introduced in a downstreammost 20% of a flowpath length within a combustion conduit.

No specific reference has been made for the location of claim 16.

Claim 17 explicitly identifies the gas as lacking the fuel. This distinguishes any introduction of the fuel/oxidizer mixture. Claim 18 further identifies that the gas is different from

the oxidizer to similarly distinguish. For example, examples of N₂ and CO₂ are noted in paragraph [0040]. Similarly, the gas may be air if the oxidizer is pure oxygen. Claim 19 identifies the introduction as being in a plurality of circumferential locations to form a curtain of gas. This would distinguish single point introduction of fuel and/or oxidizers as in various references. Claim 20 identifies continuous introduction (e.g., as noted in paragraph [0041]). The references fail to teach such continuous introduction. Rather, the references teach introduction of discrete quantities of fuel and oxidizer. Claim 21 identifies introduction of the gas with both radially inward and longitudinally downstream velocity components (e.g., as discussed at paragraph [0040]). Claim 22 similarly further identifies a tangential velocity component. Claim 23 identifies the gas introduction as being supplemental to a purge flow introduced separately. Support for this is found at paragraph [0041]. There is no suggestion for such a supplemental introduction.

Double Patenting

Claims 13-16 were provisionally rejected as unpatentable over claims 5-9 of copending application 10/718,855. Given the provisional nature of this rejection, a Terminal Disclaimer will be submitted if the objection becomes non-provisional.

Accordingly, Applicant submits that claims 1-23 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account of record.

Respectfully submitted,

By 

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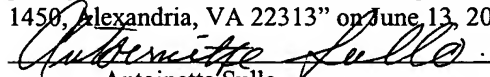
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